SECTION A4.602 RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST

	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
FEATURE OR MEASURE		Prerequis	ites and		Installer	
		electi	1	Enforcing Agency	or Designer	Third party
	Mandatory	Tier 1	Tier 2	All	All	All
PLANNING AND DESIGN						
Site Selection				T	T	
A4.103.1 A site which complies						
with at least one of the following						
characteristics is selected: 1. An infill site is selected.						
2. A greyfield site is selected.						
An EPA-recognized Brownfield site is selected.						
A4.103.2 Facilitate community						
connectivity by one of the						
following methods:						
1. Locate project within a ¹ / ₄						
-mile true walking distance of at						
least 4 basic services;						
2. Locate project within ¹ / ₂ -mile						
true walking distance of at least		_	_	_	_	
7 basic services;						
3. Other methods increasing						
access to additional resources.		_	_	_		
Site Preservation					1	
A4.104.1 An indvidual with						
oversight responsibility for the						
project has participated in an						
educational program promoting						
environmentally friendly design or						
development and has provided						
training or instruction to						
appropriate entities.						
Deconstruction and Reuse of						
Existing Materials						
A4.105.2 Existing buildings are disassembled for reuse or						
recycling of building materials.						
The proposed structure utilizes at						
least one of the following materials				П	u u	
which can be easily reused:						
1 Light fixtures						

 2. Plumbing fixtures 3. Doors and trim 4. Masonry 5. Electrical devices 6. Appliances 7. Foundations or portions of foundations 						
Site Development						
4.106.2 A plan is developed and implemented to manage storm water drainage during construction.	X					
4.106.3 Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.	X					
A4.106.1 Reserved.						
A4.106.2.1 Soil analysis is performed by a licensed design professional and the findings utilized in the structural design of the building.						
A440000				I	I	
A4.106.2.2 Soil disturbance and erosion are minimized by at least one of the following: 1. Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during construction and after occupancy.			_			
 Site access is accomplished by minimizing the amount of cut and fill needed to install access roads and driveways. Underground construction activities are coordinated to utilize the same trench, 						
minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods.						
A4.106.2.3 Topsoil shall be			·			
protected or saved for reuse as specified in this section. Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion. Tier 2. The construction area shall be identified and		\boxtimes^2	\mathbb{X}^2			

delineated by fencing or flagging to limit construction activity to the construction				
area.				
A4.106.3 Postconstruction landscape designs accomplish one or more of the following:				
Areas disrupted during construction are restored to be consistent with native vegetation species and patterns. Limit turf areas to the				
greatest extent possible. a. Not more than 50 percent				
for Tier 1. b. Not more than 25 percent for Tier 2.				
Utilize at least 75 percent native California or drought tolerant plant and tree species appropriate for the				
climate zone region. 4. Hydrozoning irrigation techniques are incorporated into the landscape design.				
A4.106.4 Permeable paving is utilized for the parking, walking or patio surfaces in compliance with the following:				
Tier 1. Not less than 20 percent of the total parking, walking or patio surfaces shall	\mathbb{X}^2			
be permeable. Tier 2. Not less than 30 percent of the total parking, walking or patio surfaces shall be permeable.		\mathbb{X}^2		
A4.106.5 Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables				
A4.106.5.1(1) and A4.106.5.1(2) for low-rise residential buildings and Tables A4.106.5.1(3) and A4.106.5.1(4) for high rise residential buildings.				
Low-rise Residential Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5.1(1).	\mathbb{X}^2			

Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5.1(2). High-rise Residential, Hotels and Motels Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5.1(3). Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5.1(4).	\mathbb{X}^2	\mathbb{X}^2		
A4.106.6 Install a vegetated roof for at least 50 percent of the roof area. Vegetated roofs shall comply with requirements for roof gardens and landscaped roofs in the California Building Code, Chapters 15 and 16.				
A4.106.7 Reduce nonroof heat islands for 50 percent of sidewalks, patios, driveways or other paved areas by using one or more of the methods listed.				
A4.106.8 Provide capability for the installation of electrical vehicle supply equipment in single-family and multifamily structures.				
A4.106.9 Provide bicycle parking facilities as noted below or meet a local ordinance, whichever is more stringent. Number of bicycle parking spaces may be reduced, as approved by the enforcing agency, due to building site characteristics, including but not limited to, isolation from other development.				
Provide short-term bicycle parking, per Section				
A4.106.9.1. 2. Provide long-term bicycle parking for multifamly buildings, per Section A4.106.9.2.				
3. Provide long-term bicycle parking for hotel and motel buildings, per Section A4.106.9.3.				

lighting systems shall be designed and installed to comply with: 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 3. Allowable BUG ratings not						
exceeding those shown in Table A4.106.10; or Comply with a lawfully enacted local ordinance, whichever is more stringent.					п	
ge						
Innovative Concepts and Local Environmental Conditions						
A4.107.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1						
Item 2						
Item 3						
Energy Efficiency			_	_	_	
General						
4.201.1 Building meets or exceeds						
the requirements of the California						
Building Energy Efficiency	×	\times^2	\times^2			
3 Standards .						
Performance Approach for						
Newly Constructed						
Buildings			T	1		
A4.203.1.1.1 An Energy Design						
Rating for the Proposed Design			-2	_	_	_
Building is included in the		\times^2	\times ²			
Certificate of Compliance documentation.						
A4.203.1.1.2 QII procedures						
specified in the Building Energy						
Efficiency Standards Reference		\times 2	\mathbb{X}^2			
Residential Appendix RA3.5 are				_	_	_
completed.						
A4.203.1.1.3 All permanently						
installed lighting is high efficiency		× 2	\times^2			
and has required controls.			-	_	_	_
A4.203.1.2.1 The Energy Budget						
is no greater than 85 percent of the						
Title 24, Part 6, Energy Budget for		\mathbf{x}^2				
the Proposed Design Building.						
A4.203.1.2.2 The Energy Budget			[EI]			
is no greater than 70 percent of the			\mathbb{X}^2			

Title 04 Best 0 France Bullett (see						
Title 24, Part 6, Energy Budget for						
the Proposed Design Building.						
Performance Approach for Additions and Alterations						
A4.204.1.1.1 All newly installed,			1			
permanently installed lighting is		\mathbb{X}^2	\times^2			
high efficacy and has required controls.						
A4.204.1.2.1 When one and only						
one mechanical system is added						
or modified, the Energy Budget is						
no greater than 95 percent of the						
Title 24, Part 6, Energy Budget for						
the Proposed Design Building.		_				
When two or more mechanical		\mathbb{X}^2				
systems are added or modified, the						
Energy Budget is no greater than						
90 percent of the Title 24, Part 6,						
Energy Budget for the Proposed						
Design Building.						
A4.204.1.2.2 When one and only						
one mechanical system is added						
or modified, the Energy Budget is						
no greater than 90 percent of the						
Title 24, Part 6, Energy Budget for						
the Proposed Design Building.			2		_	
When two or more mechanical			\mathbb{X}^2			
systems are added or modified, the						
Energy Budget is no greater than						
85 percent of the Title 24, Part 6,						
Energy Budget for the Proposed						
Design Building.						
WATER EFFICIENCY AND						
CONSERVATION						
Indoor Water Use						
4.303.1 Plumbing fixtures (water	X					
closets and urinals) and fittings						
(faucets and showerheads)						
installed in residential buildings						
shall comply with the prescriptive						
requirements of Sections						
4.303.1.1 through 4.303.1.4.4.						
4.303.2 Plumbing fixtures and	X					
fittings required in Section 4.303.1				J	_	_
shall be installed in accordance						
with the California Plumbing						
Code, and shall meet the						
applicable referenced standards.						
A4.303.1 Kitchen faucets. The						
maximum flow rate of kitchen						
faucets shall not exceed 1.5						
gallons per minute at 60 psi.						
Kitchen faucets may temporarily						

increase the flow above the maximum rate, but not to exceed						
2.2 gallons per minute at 60 psi,						
and must default to a maximum						
flow rate of 1.5 gallons per minute						
at 60 psi.						
Note: Where complying						
faucets are available, aerators						
or other means may be used to						
achieve reduction.						
A4.303.2 Alternate water source						
for nonpotable applications.						
Alternate nonpotable water						
sources are used for indoor						
potable water reduction. Alternate						
nonpotable water sources shall be						
installed in accordance with the						
California Plumbing Code.						
A4.303.3 Appliances.						
Dishwashers and clothes washers						
in residential buildings shall						
comply with the following: Install						
at least one qualified ENERGY						
STAR appliance with maximum						
water use as follows:						
1. Standard Dishwashers - 4.25						
gallons per cycle.						
2. Compact Dishwashers - 3.5						
gallons per cycle. 3. Clothes Washers - water						
factor of 6 gallons per cubic feet						
of drum capacity.						
A4.303.4 Nonwater supplied						
urinals or waterless toilets are						
installed.						
Outdoor Water Use						
4.304.1 Automatic irrigation						
systems controllers installed at						
the time of final inspection shall	×					
be weather or soil				_	_	_
moisture-based.						
A4.304.1 Install a low-water						
consumption irrigation system				_	_	
which minimizes the use of spray						
type heads.						
A4.304.2 A rainwater capture,						
storage and re-use system is						
designed and installed.						
A4.304.3 A water budget shall be						
developed for landscape		\times^2	\times^2			
irrigation.						
				All	All	All
A4.304.4 Provide water efficient						
landscape irrigation design that						

reduces the use of potable water. Tier 1. Does not exceed 65 percent of <i>ETo</i> times the landscape area. Tier 2. Does not exceed 60 percent of <i>ETo</i> times the landscape area.	⊠ ²	\mathbb{X}^2			
A4.304.5 A landscape design is installed which does not utilize potable water.					
A304.6 For new water service connections, landscaped irrigated areas more than 2,500 square feet shall be provided with separate submeters or metering devices for outdoor potable water use.					
WATER REUSE SYSTEMS				Г	
A4.305.1 Piping is installed to permit future use of a graywater irrigation system served by the clothes washer or other fixtures.					
A4.305.2 Recycled water piping is installed.					
A4.305.3 Recycled water is used for landscape irrigation.					
Innovative Concepts and Local Environmental Conditions A4.306.1 Items in this section are necessary to address innovative concepts or local environmental conditions.					
Item 1					
Item 2					
Item 3					
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY Foundation Systems					
A4.403.1 A Frost-protected Shallow Foundation (FPSF) is designed and constructed. A4.403.2 Cement use in			0	0	0
foundation mix design is reduced. Tier 1. Not less than a 20 percent reduction in cement use.	\boxtimes^2				
Tier 2. Not less than a 25 percent reduction in cement use. Efficient Framing Techniques		\mathbb{X}^2			
A4.404.1 Beams and headers					
and trimmers are the minimum size to adequately support the load.					

and layouts are designed to minimize waste.					
A4.404.3 Use premanufactured building systems to eliminate solid sawn lumber whenever possible.					
A4.404.4 Material lists are included in the plans which specify material quantity and provide direction for on-site cuts.					
Marketal					
Material Sources A4.405.1 One or more of the					
following building materials, that do not require additional resources for finishing are used: 1. Exterior trim not requiring paint or stain 2. Windows not requiring paint or stain 3. Siding or exterior wall coverings which do not require paint or stain A4.405.2 Floors that do not require additional coverings are used including but not limited to stained, natural or stamped					
concrete floors.					
A4.405.3 Postconsumer or preconsumer recycled content value (RCV) materials are used on the project. Tier 1. Not less than a 10-percent recycled content value. Tier 2. Not less than a 15-percent recycled content value.		X] ²	\boxtimes^2		
A4.405.4 Renewable source					
building products are used.		_	_	_	 _
Enhanced Durability and Reduced Maintenance					
4.406.1 Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the enforcing agency.	X				
Water Resistance and Moisture					
Management					
A4.407.1 Install foundation and landscape drains.					

downspout systems to route water at least 5 feet away from the foundation or connect to landscape drains which discharge to a dry well, sump, bioswale, rainwater capture system or other approved on-site location.		0				
A4.407.3 Provide flashing details on the building plans and comply with accepted industry standards or manufacturer's instructions.		0		0	0	
A4.407.4 Protect building materials delivered to the construction site from rain and other sources of moisture.				0	0	
A4.407.5 In Climate Zone 16 an ice/water barrier is installed at roof valleys, eaves and wall to roof intersections.						
A4.407.6 Exterior doors to the dwelling are protected to prevent water intrusion.						
A4.407.7 A permanent overhang or awning at least 2 feet in depth is provided.						
Construction Waste Reduction, Disposal and Recycling						
 4.408.1 Recycle and/or savage for reuse a minimum of 50 percent of the nonhazardous construction and demolition waste in accordance with one of the following: 1. Comply with a more stringent local construction and demolition 	X					
waste management ordinance; or 2. A construction waste management plan, per Section 4.408.2; or 3. A waste management company, per Section 4.408.3; or 4.The waste stream reduction alternative, per Section 4.408.4.						
or 2. A construction waste management plan, per Section 4.408.2; or 3. A waste management company, per Section 4.408.3; or 4.The waste stream reduction alternative, per Section 4.408.4. A4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with one of the following:						
or 2. A construction waste management plan, per Section 4.408.2; or 3. A waste management company, per Section 4.408.3; or 4.The waste stream reduction alternative, per Section 4.408.4. A4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance		\mathbb{X}^2	I ♥12			

reduction. Exception: Equivalent waste reduction methods are developed by working with local agencies.					
Building Maintenance and					
Operation 4.410.1 An operation and					
maintenance manual shall be					
provided to the building occupant	×				0
or owner.					
Innovative Concepts and Local			1	1	
Environmental Conditions					
A4.411.1 Items in this section are					
necessary to address innovative					
concepts or local environmental					
conditions.					
Item 1					
Item 2					
Item 3					
ENVIRONMENTAL QUALITY					
Fireplaces 4.503.1 Any installed gas fireplace					
shall be a direct-vent					
sealed-combustion type. Any					
installed woodstove or pellet stove					
shall comply with US EPA Phase II	×				
emission limits where applicable.			_	_	_
Woodstoves, pellet stoves and					
fireplaces shall also comply with					
applicable local ordinances.					
Pollutant Control					
4.504.1 Duct openings and other					
related air distribution component	×				
openings shall be covered during			_	_	_
construction.					
4.504.2.1 Adhesives, sealants and					
caulks shall be compliant with VOC	×				
and other toxic compound limits.4.504.2.2 Paints, stains and other					
coatings shall be compliant with	X				
VOC limits.	LEJ				
4.504.2.3 Aerosol paints and					
coatings shall be compliant with	_		_	_	_
product weighted MIR limits for	×				
ROC and other toxic compounds.					
4.504.2.4 Documentation shall be					
provided to verify that compliant	×				
VOC limit finish materials have					
been used.					
	1	1	,	ı	ı
4.504.3 Carpet and carpet				_	_
systems shall be compliant with	×				
VOC limits.	[EZ				
4.504.4 80 percent of floor area	×				

receiving resilient flooring shall						
comply with the VOC-emission						
limits defined in the Collaborative						
for High Performance Schools						
(CHPS) High Performance						
Products Database or be certified						
under the Resilient Floor						
Covering Institute (RFCI)						
FloorScore program; or meet						
California Dept. of Public Health,						
"Standard Method for the Testing						
and Evaluation of Volatile						
Organic Chemical Emissions						
from Indoor Sources Using						
Environmental Chambers",						
Version 1.1, February 2010 (also						
known as Specification 01350.)						
4.504.5 Particleboard, medium						
density fiberboard (MDF) and						
hardwood plywood used in						
interior finish systems shall	×					
comply with low formaldehyde						
emission standards.						
A4.504.1 Use composite wood						
products made with either						
California Air Resources Board		_	_	_	_	_
approved no-added						
formaldehyde (NAF) resins or						
ultra-low emitting formaldehyde						
(ULEF) resins. A4.504.2 Install VOC compliant						
resilient flooring systems.						
Tier 1. At least 90 percent of						
the resilient flooring installed		2 				
		\mathbf{x}^2				
shall comply.						
Tier 2. At least 100 percent of			2			
the resilient flooring installed			\mathbf{x}^2			
shall comply. A4.504.3 Thermal insulation						
installed in the building shall meet the following requirements:						
Tier 1. Install thermal insulation		EE 2				
in compliance with the		\mathbb{X}^2				
VOC-emission limits defined in						
Collaborative for High						
Performance Schools (CHPS)						
Low-emitting Materials List.						
Tier 2. Install insulation which			[[2] 2			
contains No-Added			\mathbb{X}^2			
Formaldehyde (NAF) and is in						
compliance with the						
VOC-emission limits defined in						
Collaborative for High						
Performance Schools (CHPS)						
Low-emitting Materials List.						
Interior Moisture Control						

4.505.2 Vapor retarder and capillary break is installed at slab-on-grade foundations.	X			
4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.	X			
Indoor Air Quality and Exhaust			 	
4.506.1 Return air filters with a value greater than MERV 6 shall be installed on HVAC systems. Pressure drop across the filter shall not exceed 0.1 inches water column.				
A4.506.2 [HR] Provide filters on return air openings rated MERV 6 or higher during construction when it is necessary to use HVAC equipment.				
A4.506.3 Direct-vent appliances shall be used when equipment is located in conditioned space; or the equipment must be installed in an isolated mechanical room.				
Environmental Comfort				
4.507.1 Reserved.				
 4.507.2. Duct systems are sized, designed, and equipment is selected using the following methods: Establish heat loss and heat gain values according to ANSI/ACCA 2 Manual J-2004 or equivalent. Size duct systems according to ANSI/ACCA 1 Manual D-2009 or equivalent. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S-2004 or equivalent. 				
Outdoor Air Quality Reserved Innovative Concepts and Local	-			
Environmental Conditions A4.509.1 Items in this section are necessary to address innovative concepts or local environmental conditions. Item 1 Item 2 Item 3 Installer and Special Inspector Qualifications		0		0
Qualifications				

Qualifications			
702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.	X		
702.2 Special inspectors employed by the enforcing agency must be qualified and able to demonstrate competence in the discipline they are inspecting.	X		
Verifications			
703.1 Verification of compliance with this code may include construction documents, plans, specifications builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which show substantial conformance.	X		

SECTION A5.602 NONRESIDENTIAL OCCUPANCIES APPLICATION CHECKLISTS

		VOLUNTARY 1	
ADDI IO ATION OUTON IOT FOR DOG		CALGreenTier	CALGreenTier
APPLICATION CHECKLIST FOR BSC	MANDATORY	1	2
Requirements			
Project meets all of the requirements of Divisions 5.1 through 5.5.		_	_
Planning and Design	X	Ш	Ш
Site Selection			
A5.103.1 Community connectivity. Locate project			
on a previously developed site within a 1/- mile			
radius of at least ten basic services, listed in Section A5.103.1.			
A5.103.2 Brownfield or greyfield site			
redevelopment or infill area development. Select			
for development a brownfield in accordance with			
Section A5.103.2.1 or on a greyfield or infill site as			
defined in Section A5.102.			
A5.103.3.1 Brownfield redevelopment. Develop			
a site documented as contaminated and fully			
remediated or on a site defined as a brownfield.			
Site Preservation		1	Γ
A5.104.1.1 Local zoning requirement in place.			
Exceed the zoning's open space requirement for			
vegetated open space on the site by 25 percent.			
A5.104.1.2 No local zoning requirement in place.			
Provide vegetated open space area adjacent to the building equal to the building footprint area.			
A5.104.1.3 No open space required in zoning			
ordinance. Provide vegetated open space equal to			П
20 percent of the total project site area.		П	П
Deconstruction and Reuse of Existing Structures			
A5.105.1.1 Existing building structure. Maintain at			
least 75 percent of existing building structure			
(including structural floor and roof decking) and			
envelope (exterior skin and framing) based on			_
surface area.			
Exceptions:			
Window assemblies and nonstructural			
roofing material.			
Hazardous materials that are remediated as			
a part of the project.			
3. A project with an addition of more than two			
times the square footage of the existing			

building. A5.105.1.2 Existing nonstructural elements. Reuse existing interior nonstructural elements (interior walls, doors, floor coverings and ceiling systems) in at least 50 percent of the area of the completed building (including additions). Exception: A project with an addition of more than two times the square footage of the existing building. A5.105.1.3 Salvage. Salvage additional items in good condition such as light fixtures, plumbing fixtures and doors for reuse on this project in an onsite storage area or for salvage in dedicated collection bins. Document the weight or number of the items salvaged.		
Site Development	1	
5.106.1 Storm water pollution prevention. Newly constructed projects and additions which disturb less than one acre of land shall prevent the pollution of stormwater runoff from the construction activities through one of the following measures: 5.106.1.1 Local ordinance.	X	
or	or	
5.106.1.2. Best management practices (BMP). See section 5.106.1.2 for BMP methods.	X	
A5.106.2 Storm water design. Design storm water runoff rate and quantity in conformance with Section A5.106.2.1 and storm water runoff quality by Section A5.106.3.2 or by local requirements, whichever are stricter.		
A5.106.2.1 Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions. Exception: If the site is already greater than 50 percent impervious, implement a storm		
water management plan resulting in a 25-percent decrease in rate and quantity. A5.106.2.2 Storm water runoff quality. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).		
A5.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.1. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to		

those listed in Section A5.106.3.			
5.106.4 Bicycle parking. For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. 5.106.4.1 Bicycle parking. [BSC] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter.	X		
5.106.4.1.1 Short-term bicycle parking. If the new project or addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.	X		
Exception: Additions or alterations which add nine or fewer visitor vehicular parking spaces 5.106.4.1.2 Long-term bicycle parking. For new buildings with over 10 tenant-occupants or for additions or alterations that add 10 or more tenant vehicular parking spaces, provide secure bicycle parking for 5 percent of tenant vehicular parking spaces being added, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and shall meet one of the following: 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; or 3. Lockable, permanently anchored bicycle lockers. Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.			
A5.106.4.3 Changing rooms. For buildings with over 10 tenant-occupants, provide changing/shower facilities in accordance with Table A5.106.4.3 or document arrangements with nearby changing/shower facilities.			
A5.106.5.1 Designated parking for fuel-efficient vehicles. Provide designated parking for any combination of low-emitting, fuel-efficient and		X	X
carpool/van pool vehicles as shown in:			
A5.106.5.1.1. Tier 1 10% of total spaces per Table A5.106.5.1.1.			
A5.106.5.1.2. Tier 2 12% of total spaces per Table A5.106.5.1.2.			
A5.106.5.1.3 Parking stall marking.			

1		Γ	ı
A5.106.5.1.4 Vehicle designations.			
5.106.5.2 Designated parking. In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2.	X		
5.106.5.2.1 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/ VANPOOL/EV			
Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces.			
A5.106.5.3.1 Single charging space requirements. When only a single charging space is required, install a listed raceway capable of accommodating a dedicated branch circuit. The raceway shall not be less than trade size 1. The raceway shall be securely fastened at the main service or subpanel and shall terminate in close proximity to the proposed location of the charging system into a listed cabinet, box or enclosure. Exception: Other pre-installation methods approved by the local enforcing agency that provide sufficient conductor sizing and service capacity to install Level 2 EVSE.			
A5.106.5.3.2 Multiple charging spaces required. When multiple charging spaces are required, plans shall include the location(s) and type of the EVSE, raceway method(s), wiring schematics and electrical calculations to verify that the electrical system has sufficient capacity to charge simultaneously all the electrical vehicles at all designated EV charging spaces at their full rated amperage. Plan design shall be based upon Level 2 EVSE at its maximum operating ampacity. Provide raceways from the electrical service panel to the designated parking areas which are required to be installed at the time of construction.			
 Note: Utilities and local enforcing agencies may have additional requirements for metering and EVSE installation, and should be consulted during the project design and installation. A5.106.5.3.3 Tier 1. At least 3 percent of the total 		X	

parking spaces, but not less than one, shall be capable of supporting installation of future electric vehicle supply equipment (EVSE).			
A5.106.5.3.4 Tier 2. At least 5 percent of the total			X
parking spaces, but not less than two, shall be capable of supporting installation of future EVSE.			
A5.106.5.3.5 Labeling requirement. A label stating			
"EV CHARGE CAPABLE" shall be posted in a conspicuous place at the service panel or subpanel			
and the EV charging space.			
A5.106.6 Parking capacity. Design parking			
capacity to meet but not exceed minimum local			
zoning requirements.			
A5.106.6.1 Reduce parking capacity. With the			
approval of the enforcement authority, employ strategies to reduce on-site parking area by			
1. Use of on street parking or compact spaces,			
illustrated on the site plan or		_	_
2. Implementation and documentation of			
programs that encourage occupants to			
carpool, ride share or use alternate			
transportation. A5.106.7 Exterior walls. Meet requirements in the			
current edition of the California Energy Code and			
comply with either Section A5.106.7.1 or A5.106.7.2			
for wall surfaces:			
A5.106.7.1 Fenestration. Provide vegetative or			
man-made shading devices for all fenestration on			
east-, south- and west-facing walls. A5.106.7.1.1 East and west walls. Shading			
devices shall have 30% coverage to a height			
of 20 feet or to the top of the exterior wall,			
whichever is less.			
A5.106.7.1.2 South walls. Shading devices			
shall have 60% coverage to a height of 20			
feet or to the top of the exterior wall,			_
whichever is less.			
A5.106.7.2 Opaque wall areas. Use wall			
surfacing with SRI 25 (aged), for 75% of opaque		_	_
wall areas.			Ц
5.106.8 Light pollution reduction. [N] Outdoor			
lighting systems shall be designed and installed to	X		
comply with the following:			
1. The minimum requirements in the <i>California</i>			
Energy Code for Lighting Zones 1–4 as defined in Chapter 10 of the California Administrative			
Code; and			
2. Backlight, Uplight and Glare (BUG) ratings as			
defined in IESNA TM-15-11; and			
3. Allowable BUG ratings not exceeding those	Or		
shown in Table 5.106.8, or Comply with a local ordinance lawfully enacted	[22]		
pursuant to Section 101.7, whichever is more	×		
Final Section 10 monor to monor	L		

stringent.			
Exceptions: [N]			
1. Luminaires that qualify as exceptions in			
Section 140.7 of the California Energy Code			
2. Emergency lighting			
Note: [N] See also California Building Code, Chapter 12, Section 1205.6 for college campus			
lighting requirements for parking facilities and			
walkways.			
•			
5.106.10 Grading and paving. Construction plans	X		
shall indicate how site grading or a drainage system			
will manage all surface water flows to keep water			
from entering buildings. Examples of methods to			
manage surface water include those shown in Items			
1–5. See exception for additions or alterations.			
A5.106.11 Heat island effect. Reduce nonroof heat			
islands and roof heat islands as follows:		_	_
A5.106.11.1 Hardscape alternatives. Use one or			
a combination of strategies 1 through 3 for 50			
percent of site hardscape or put 50 percent of			
parking underground.			
Use light colored materials with an initial solar reflectance value of at least .30 as			
determined in accordance with ASTM			
Standards E 1918 or C 1549.			
2. Use open-grid pavement system or			
pervious or permeable pavement system.		ш	
A5.106.11.2 Cool roof for reduction of heat		П	
island effect. Use roofing materials having a			
minimum aged solar reflectance, thermal			
emittance complying with Sections A5.106.11.2.2			
and A5.106.11.2.3 or a minimum aged or Solar			
Reflectance Index (SRI)3 equal to or greater than			
the values shown in:			
Table A5.106.11.2.2 – Tier 1 or		×	
Table A5.106.11.2.3 – Tier 2			X
Exceptions:			
1.Roof constructions that have a thermal mass			
over the roof membrane, including areas of			
vegetated (green) roofs, weighing at least 25			
lb/sf.			
2.Roof area covered by building integrated			
solar photovoltaic and building integrated			
solar thermal panels.			
Energy Efficiency			
Performance Requirements	_	0	0
5.201.1 Scope. Building meets or exceeds the	X	2	2
requirements of the California Building Energy			
Efficiency Standards.3 A5.203.1 Energy efficiency. Nonresidential,			
high-rise residential and hotel/motel buildings that			
include lighting and/or mechanical systems shall			
comply with Sections A5.203.1.1 and either			

A5.203.1.2.1 or A5.203.1.2.2. Newly constructed buildings, as well as additions and alterations, are included in the scope of these sections. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 but are not required to comply with Sections A5.203.1.1.2 or A5.203.1.2.		
A5.203.1.1.1 Outdoor lighting. Newly installed outdoor lighting power is no greater than 90 percent of the Title 24, Part 6 calculated value of allowed outdoor lighting power.	2	2
A5.203.1.1.2 Service water heating in restaurants. Newly constructed restaurants 8,000 square feet or greater and with service water heaters rated 75,000 Btu/h or greater installed a solar water-heating system with a minimum solar savings fraction of 0.15 or meet one of the exceptions.	2	≥ 2
A5.203.1.1.3 Functional areas where compliance with residential lighting standards is required. For newly constructed high-rise residential dwelling units and hotel and motel guest rooms, indoor lighting complies with the applicable requirements in Appendix A4 Residential Voluntary Measures, Division A4.2 – Energy Efficiency, Section A4.203.1.1.3. For additions and alterations to high-rise residential dwelling units and hotel and motel guest rooms, indoor lighting complies with the applicable requirements in Appendix A4 Residential Voluntary Measures, Division A4.2 – Energy Efficiency, Section A4.204.1.1.1.	2	2
A5.203.1.2.1 Tier 1. For building projects that include indoor lighting or mechanical systems, but not both, the Energy Budget is no greater than 95 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building. For building projects that include indoor lighting and mechanical systems, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building.	≥ 2	
A5.203.1.2.2 Tier 2. For building projects that include indoor lighting or mechanical systems, but not both, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building. For building projects that include indoor lighting and mechanical systems, the Energy Budget is no greater than 85 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building. Renewable Energy		2
A5.211.1 On-site renewable energy. Use on-site renewable energy for at least 1 percent of the electrical service overcurrent protection device rating calculated in accordance with the 2013 <i>California Electrical Code</i> or 1KW, whichever is greater, in addition to the electrical demand required to meet 1 percent of natural gas and propane use calculated in		

accordance with the 2013 California Plumbing Code. A5.211.1.1 Documentation. Calculate renewable on-site system to meet the requirements of Section A5.211.1. Factor in net-metering, if offered by local utility, on an annual basis. A5.211.3 Green power. Participate in the local utility's renewable energy portfolio program that provides a minimum of 50-percent electrical power from renewable sources. Maintain documentation through utility billings. Elevators, Escalators and Other Equipment			
A5.212.1 Elevators and escalators. In buildings			
with more than one elevator or two escalators,			
provide systems and controls to reduce the energy			
demand of elevators and escalators as follows.			
Document systems operation and controls in the			
project specifications and commissioning plan.			
A5.212.1.1 Elevators. Traction elevators shall			
have a regenerative drive system that feeds			
electrical power back into the building grid when			
the elevator is in motion.			
A5.212.1.1.1 Car lights and fan. A parked			
elevator shall turn off its car lights and fan			
automatically until the elevator is called for use.			
A5.212.1.2 Escalators. An escalator shall have a			
variable voltage variable frequency (VVVF) motor			
drive system that is fully regenerative when the			
escalator is in motion.			
A5.212.1.4 Controls. Controls that reduce			
energy demand shall meet requirements of CCR,			
Title 8, Chapter 4, Subchapter 6 and shall not			
interrupt emergency operations for elevators			
required in CCR, Title 24, Part 2, California			
Building Code.			
Francisco Filitary Otan I Francisco			
Energy Efficient Steel Framing AF 212 1 Steel framing Design for and ampley		_	
A5.213.1 Steel framing. Design for and employ techniques to avoid thermal bridging.			
Water Efficiency and Conservation			
Indoor Water Use			
5.303.1 Meters. Separate submeters or metering			
devices shall be installed for the uses described in			
Sections 5.303.1.1 and 5.303.1.2.			
5.303.1.1 New buildings or additions in excess			
of 50,000 square feet. Separate submeters shall			
be installed as follows:			
For each individual leased, rented or other	×		
tenant space within the building projected	_		
to consume more than 100 gal/day,			
including, but not limited to, spaces used for			
laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty			
salon or barber shop.			
Where separate submeters for individual			
building tenants are unfeasible, for water			

supplied to the following subsystems: a. Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s) b. Makeup water for evaporative coolers	X		
greater than 6 gpm (0.04 L/s) c. Steam and hot-water boilers with	X		
energy input more than 500,000 Btu/h (147 kW)			
5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day.	X		
5.303.2 Water reduction. Plumbing fixtures shall meet the maximum flow rate values shown in Table	X		
5.303.2.3.			
Exception: Buildings that demonstrate 20-percent overall water use reduction. In this case, a calculation demonstrating a 20-percent reduction in the building "water use baseline," as			
established in Table 5.303.2.2, shall be provided. 5.303.2.1 Areas of additions or alteration. For those occupancies within the authority of the	X		
California Building Standards Commission as specified in Section 103, the provisions of Section 5.303.2 and Section 5.303.3 shall apply to new			
fixtures in additions or areas of alterations to the			
building. A5.303.2.3.1 Tier 1 – 30-percent savings.		X	
A schedule of plumbing fixtures and fixture		<u> </u>	
fittings that will reduce the overall use of potable water within the building by 30			
percent shall be provided. A5.303.2.3.2 Tier 2 – 35-percent savings.			
A schedule of plumbing fixtures and fixture			X
fittings that will reduce the overall use of potable water within the building by 35			
percent shall be provided. A5.303.2.3.3 Forty-percent savings . A			
schedule of plumbing fixtures and fixture			X
fittings that will reduce the overall use of potable water within the building by 40			
percent shall be provided (Calculate savings by Water Use			
Worksheets)			
A5.303.2.3.4 Nonpotable water systems for indoor use. Utilizing nonpotable water			
systems (such as captured rainwater,			
treated graywater, and recycled water) intended to supply water closets, urinals,			
and other allowed uses, may be used in the			
calculations demonstrating the 30, 35 or 40 percent reduction. The nonpotable water			
systems shall comply with the current			
edition of the California Plumbing Code.	I		

5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following: 5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28	
with the following: 5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28	
5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28	
gallong par fluich. Tank type water algests shall be	
gallons per flush. Tank-type water closets shall be	
certified to the performance criteria of the U.S.	
EPA WaterSense Specification for Tank-Type	
Toilets. Note: The effective flush volume of dual	
flush toilets is defined as the composite,	
average flush volume of two reduced	
flushes and one full flush.	
5.303.3.2 Urinals. The effective flush volume of	
urinals shall not exceed 0.5 gallons per flush.	
5.303.3.3 Showerheads.	
5.303.3.3.1 Single showerhead.	
Showerheads shall have a maximum flow	
rate of not more than 2.0 gallons per minute	
at 80 psi. Showerheads shall be certified to	
the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.	
5.303.3.3.2 Multiple showerheads	
serving one shower. When a shower	
is served by more than one	
showerhead, the combined flow rate of	
all showerheads and/or other shower	
outlets controlled by a single valve	
shall not exceed 2.0 gallons per minute	
at 80 psi, or the shower shall be designed to allow only one shower	
outlet to be in operation at a time.	
Note: A hand-held shower shall	
be considered a showerhead.	
A5.303.3 Appliances.	
1. Clothes washers shall have a maximum Water	
Factor (WF) that will reduce the use of water.	
2. Dishwashers shall meet the criteria in Section	
A5.303.3(2)(a) and (b). 3. Ice makers shall be air cooled.	
3. Ice makers shall be air cooled. 4. Food steamers shall be connectionless or	
boilerless.	
5. The use and installation of water softeners	
shall be limited or prohibited by local agencies	
6. Combination ovens shall not consume more	
than 10 gph (38 L/h) in the full operational	
mode.	
7. Commercial pre-rinse spray valves	
manufactured on or after January 1, 2006	
shall function at equal to or less than 1.6 gpm (0.10 L/s) at 60 psi (414 kPa) and	
a. Be capable of cleaning 60 plates in an	
average time of not more than 30 seconds	

per plate			
 b. Be equipped with an integral automatic 			
shutoff			
c. Operate at static pressure of at least 30 psi			
(207 kPa) when designed for a flow rate of			
1.3 gpm (0.08 L/s) or less			
5.303.4 Wastewater reduction. [N] Each building			
shall reduce by 20 percent wastewater by one of the			
following methods:	Ac applicable		
	As applicable		
The installation of water-conserving fixtures or	X		
2. Utilizing nonpotable water systems.	X		
A5.303.5 Dual plumbing. New buildings and		_	_
facilities shall be dual plumbed for potable and			
recycled water systems.			
5.303.6 Standards for plumbing fixtures and			
fittings. Plumbing fixtures and fittings shall be			
installed in accordance with the California Plumbing	As applicable		
Code, and shall meet the applicable standards	×		
referenced in Table 1401.1 of the California Plumbing	_		
Code and in Chapter 6 of this code.			
Outdoor Water Use			
5.304.1 Water budget. A water budget shall be			
3	_		
developed for landscape irrigation use. Applies to	×		
additions or alterations.			
5.304.2 Outdoor potable water use. For new water	X		
service or for addition or alteration requiring			
upgraded water service for landscaped areas of at			
least 1,000 square feet but not more than 5,000			
square feet (the level at which the Water Code § 535			
applies), separate submeters or metering devices			
shall be installed for potable water use.			
A5.304.2.1 Outdoor potable water use. For			
new water service not subject to the provisions of			
Water Code Section 535, separate meters or			
submeters shall be installed for outdoor potable			
water use for landscaped areas of at least 500			
square feet but not more than 1,000 square feet			
(the level at which Section 5.304.2 applies).			
5.304.3 Irrigation design. In new nonresidential			
construction or for additions or alteration with at least			
1,000 square feet but not more than 2,500 square			
feet of cumulative landscaped area (the level at			
which the MWELO applies), install irrigation			
controllers and sensors which include the following			
criteria and meet manufacturer's recommendations.			
ontona and meet mandiacturer 3 recommendations.			
5 304 3 1 Irrigation controllers Automatic			
5.304.3.1 Irrigation controllers. Automatic			
irrigation system controllers installed at the time			
of final inspection shall comply with the following:			
Controllers shall be weather- or soil			
moisture-based controllers that			
automatically adjust irrigation in response to			
changes in plants' needs as weather			
conditions change.	×		
Weather-based controllers without integral	As applicable		
		·	

rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.	X			
Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association.				
A5.304.4 Potable water reduction. Provide water efficient landscape irrigation design that reduces by the use of potable water. A5.304.4.1 Tier 1 – Reduce the use of potable water to a quantity that does not exceed 60 percent of ETo times the landscape area. A5.304.4.2 Tier 2 – Reduce the use of potable		ı	X	
water to a quantity that does not exceed 55 percent of ETo times the landscape area. Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in A5.304.4. A5.304.4.3 Verification of compliance. A				X
calculation demonstrating the applicable potable water use reduction required by this section shall be provided.		ı	×	X
A5.304.5 Potable water elimination. Provide a water efficient landscape irrigation design that				
eliminates the use of potable water beyond the initial requirements for plant installation and establishment. Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in Section A5.304.4.		l		
A5.304.6 Restoration of areas disturbed by constru				
Restore all areas disturbed during construction by plan	iting			
with local native and/or noninvasive vegetation.				
A5.304.7 Previously developed sites. On previously	•			
developed or graded sites, restore or protect at least 5	U			
percent of the site area with native and/or noninvasive vegetation.				
A5.304.8 Graywater irrigation system. Install graywa	nter			
collection system for onsite subsurface irrigation using				
graywater.				
Water Reuse				
A5.305.1 Nonpotable water systems. Nonpotable wa				
systems for indoor and outdoor use shall comply with t	he			
current edition of the California Plumbing Code.				
A5.305.2 Irrigation systems. Irrigation systems regulate				
local water efficient landscape ordinance or by the Cali				
Department of Water Resources Model Water Efficient				
Landscape Ordinance (MWELO) shall use recycled wa Material Conservation and Resource Efficiency	ucl.			
Efficient Framing Systems				
A5.404.1 Wood framing. Employ advanced wood fram	ning			
i ao.404. i vvood framing. E mbiov advanced wood fran	HIHU			

techniques or OVE, as permitted by the enforcing agency.		
Material Sources		
A5.405.1 Regional materials. Select building materials or		
products for permanent installation on the project that have		
been harvested or manufactured in California or within 500		
miles of the project site, meeting the criteria listed in Section	_	_
A5.405.1.		
A5.405.2 Bio-based materials. Select bio-based building		
materials per Section A5.405.2.1 or A5.405.2.2.		
A5.405.2.1 Certified wood products. Certified wood is		
an important component of green building strategies and		
the California Building Standards Commission will		
		ш
continue to develop a standard through the next code		
cycle.		
A5.405.2.2 Rapidly renewable materials. Use materials		
made from plants harvested within a ten-year cycle for at		
least 2.5 percent of total materials value, based on		_
estimated cost.		
A5.405.3 Reused materials. Use salvaged, refurbished,		
refinished or reused materials for at least 5 percent of the		
total value, based on estimated cost of materials on the		
project.		
A5.405.4 Recycled content. Use materials, equivalent in		
performance to virgin materials, with a total (combined)		
recycled content value (RCV) of:		
Tier 1. The RCV shall not be less than 10 percent of the		
total material cost of the project.	X	
Tier 2. The RCV shall not be less than 15 percent of the		
total material cost of the project.		×
Note: Use the equations in the subsections for		
calculating total materials cost, recycled content,		
RCV of materials and assemblies, and total RCV.		
A5.405.5 Cement and concrete. Use cement and concrete		
made with recycled products and complying with the following		
sections:		
A5.405.5.1 Cement. Cement shall comply with one of the		
following standards:		
 Portland cement shall meet ASTM C 150. 		_
2.Blended hydraulic cements shall meet ASTM C		
595.		
Other Hydraulic Cements shall meet ASTM C		
1157.		
A5.405.5.2 Concrete. Unless otherwise directed by the		
Engineer of Record, use concrete manufactured with		
cementitious materials in accordance with Sections		
A5.405.5.2.1 and A5.405.5.2.1.1, as approved by the	_	_
enforcing agency.		
A5.405.5.2.1 Supplementary cementitious materials		
(SCMs). Use concrete made with one or more of the		
SCMs listed in Section A5.405.5.2.1.		
A5.405.5.2.1.1 Mix design equation. Use any		
combination of one or more SCMs, satisfying		
Equation A4.5-14.		П
Exception: Minimums in mix designs		
approved by the Engineer of Record may		

be lower where high early strength is needed. A5.405.5.3 Additional means of compliance. An following measures shall be permitted to be employ the production of cement or concrete, depending o availability and suitability, in conjunction with Section A5.405.5.2. A5.405.5.3.1 Cement. The following measures used in the manufacture of cement.	y of the yed for n their on				
A5.405.5.3.1.1 Alternative fuels. Where					
permitted by state or local air quality stand					
A5.405.5.3.1.2 Alternative power. Alternative power generated at the cement pla					
and/or green power purchased from the uti					
meeting the requirements of Section A5.21					
			_		
A5.405.5.3.2 Concrete. The following					
measures may be used in the manufacture					
of concrete,					
A5.405.5.3.2.1 Alternative energy. Renewable or alternative energy					
meeting the requirements of Section					
A5.211.					
A5.405.5.3.2.2 Recycled aggregates.					
Concrete made with one or more of the					
materials listed in Section			L		Ш
A5.405.5.3.2.2.					
A5.405.5.3.2.3 Mixing water. Water					
recycled by the local water purveyor or				_	_
water reclaimed from manufacturing			l l		Ш
processes and conforming to ASTM C 1602.					
A5.405.5.3.2.4 High strength					
concrete. Concrete elements designed					
to reduce their total size compared to					
standard 3,000 psi concrete, as					_
approved by the Engineer of Record.					
Enhanced Durability and Reduced Maintenance			1	1	
A5.406.1.1 Service life. Select materials for					
longevity and minimal deterioration under conditions of use.					
A5.406.1.2 Reduced maintenance. Select materials					
that require little, if any, finishing.					П
A5.406.1.3 Recyclability. Select materials that can			ľ		
be re-used or recycled at the end of their service life.				_	
Weather Resistance and Moisture Management			•		
5.407.1 Weather protection. Provide a					
weather-resistant exterior wall and foundation					
envelope as required by <i>California Building Code</i> ,					
Section 1403.2 and <i>California Energy Code</i> , Section 150, manufacturer's installation instructions or local					
· ·		σı			
ordinance, whichever is more stringent. ³ 5.407.2 Moisture control. Employ moisture control	l	X			
measures by the following methods;					
5.407.2.1 Sprinklers. Design and maintain	I	X			

landscape irrigation systems to prevent spray on		
structures.		
5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or	×	
wind-driven rain to prevent water intrusion into		
buildings as follows:		
5.407.2.2.1 Exterior door protection.	×	
Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent		
floor and wall finishes within at least 2 feet		
around and perpendicular to such openings plus		
at least one of the following:		
 An installed awning at least 4 feet in depth. 		
The door is protected by a roof overhang at least 4 feet in depth.		
3. The door is recessed at least 4 feet.		
4. Other methods which provide		
equivalent protection.		
5.407.2.2.2 Flashing. Install flashings		
integrated with a drainage plane.	×	
Construction Waste Reduction, Disposal and		
Recycling		
5.408.1 Construction waste management. Recycle	×	
and/or salvage for reuse a minimum of 50% of the non- hazardous construction and demolition waste in	or	
accordance with Section 5.408.1.1, 5.408.1.2 or		
5.408.1.3; or meet a local construction and		
demolition waste management ordinance, whichever		
is more stringent.		
5.408.1.1 Construction waste management	×	
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a	×	
5.408.1.1 Construction waste management	×	
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that	×	
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section.	×	
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. 5.408.1.2 Waste management company.	X	
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. 5.408.1.2 Waste management company. Utilize a waste management company that can		
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. 5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the		
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. 5.408.1.2 Waste management company. Utilize a waste management company that can		
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. 5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section.		
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3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets. 5.408.1.3 Wastestream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 50 percent minimum requirement as approved by the enforcing agency.	X		
5.408.1.4 Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Sections 5.408.1.1 through 5.408.1.3. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.			
5.408.3 Excavated soil and land clearing debris. [BSC] 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed. Exception: Reuse, either on-or off-site, of	X		
vegetation or soil contaminated by disease or pest infestation.			
A5.408.3.1 Enhanced construction waste reduction—Tier 1. Divert to recycle or salvage at least 65% of nonhazardous construction and demolition waste generated at the site. A5.408.3.1.1 Enhanced construction waste		X	
reduction–Tier 2. Divert to recycle or salvage at least 80% of nonhazardous construction waste generated at the site. A5.408.3.1.2 Verification of compliance. A copy of the completed waste management			X
report or documentation of certification of the waste management company utilized shall be provided. Exceptions:		X	X
 Excavated soil and land-clearing debris Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with 			
this item do not exist 3. Demolition waste meeting local ordinance or calculated in			

consideration of local recycling facilities and markets.			
Life Cycle Assessment			
A5.409.1 General. Life cycle assessment shall be			
ISO 14044 compliant. The service life of the building			
and materials assemblies shall not be less than 60			
years.			
A5.409.2 Whole building life cycle assessment.			
Conduct a whole building life assessment, including			
operating energy, showing that the building project			
achieves at least a 10-percent improvement for at			
least three of the impacts listed in Section A5.409.2.2,			
one of which shall be climate change, compared to a			
reference building.			
A5.409.3 Materials and system assemblies. If			
whole building analysis of the project is not elected,			
select a minimum of 50% of materials or assemblies			
based on life cycle assessment of at least three for			
the impacts listed in Section A5.409.2.2, one of which			
shall be climate change.			
A5.409.4 Substitution for prescriptive standards. Performance of a life cycle assessment completed in			
accordance with Section A5.409.2 may be substituted			
for other prescriptive provisions of Division A5.4,		_	
including those made mandatory through local			
adoption of Tier 1 or Tier 2 in Division A5.6.			
A5.409.5 Verification of compliance.			
Documentation of compliance shall be provided as follows:			
 The assessment is performed in accordance with ISO 14044. 			
2. The project meets the requirements of other			
parts of Title 24.			
3. A copy of the analysis shall be made available			
to the enforcement authority.			
4. A copy of the analysis and any maintenance or			
training recommendations shall be included in			ш
the operation and maintenance manual. See notes for available tools.			
Building Maintenance and Operation			
5.410.1 Recycling by occupants. Provide readily			
accessible areas that serve the entire building and are			
identified for the depositing, storage and collection of	X		
non-hazardous materials for recycling, including (at a			
minimum) paper, corrugated cardboard, glass, plastics			
and metals or meet a lawfully enacted local recycling			
3			
ordinance, if more restrictive.			
5.410.1.1 Additions. [A] All additions conducted			
within a 12-month period under single or multiple	_		
permits, resulting in an increase of 30 percent or more	X		
in floor area, shall provide recycling areas on site.			
Exception: Additions within a tenant space			
resulting in less than a 30-percent increase in the			
tenant space floor area.			

5.410.1.2 Sample ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the <i>Public Resources Code.</i> Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act).	X	
Note: A sample ordinance for use by local agencies may be found in Appendix A of the document at the CalRecycle's web site.		
5.410.2 Commissioning. [N] For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. Commissioning requirements shall include items listed in this section. Exceptions: 1. Dry storage warehouses of any size 2. Areas under 10,000 square feet used for offices or other conditioned accessory spaces within dry storage warehouses 3. Tenant improvements under 10,000 square feet as described in Section 303.1.1 4. Commissioning requirements for energy systems covered by the 2013 California Energy Code. All building operating systems covered by Title 24,		
Part 6, as well as process equipment and controls, and renewable energy systems shall be included in the scope of the commissioning requirements.		
5.410.2.1 Owner's or Owner representative's Project Requirements (OPR). [N] The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the items listed in this section.	X	
5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the systems listed in this section.	X	
5.410.2.3 Commissioning plan. [N] Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning plan shall include the items listed in this section.	X	
5.410.2.4 Functional performance testing [N] Functional performance tests shall demonstrate the correct installation and operation of each component, system and system-	X	

to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.		
5.410.2.5 Documentation and training.[N] A systems manual and systems operations training are required, including Occupational Safety and Health Act (OSHA) requirements in <i>California Code ofRegulations</i> (CCR), Title 8, Section 5142, and other related regulations.	X	
5.410.2.5.1 Systems manual. [N] Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representative. The systems manual shall include the items listed in this section.	X	
5.410.2.5.2 Systems operations training. [N] A program for training of the appropriate maintenance staff for each equip-ment type and/or system shall be developed and documented in the commissioning report and shall include the items listed in this section.	X	
5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.	X	
5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1.	X	
5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include, as applicable to the project the systems listed in this section.	×	
5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system.	X	
5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the	X	

system in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency.		
5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.	X	
5.410.4.5 Operation and maintenance (O & M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.	⊠	
5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.	X	
Environmental Quality Fireplaces		
 5.503.1 General. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in the <i>California Energy Code</i>, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances. 5.503.1.1 Woodstoves. Woodstoves shall comply with US EPA Phase II emission limits, where 	⊠ As applicable	
applicable.	X	
Pollutant Control A5.504.1 Indoor air quality (IAQ) during		
construction. Maintain IAQ as provided in Sections A5.504.1.1 and A5.504.1.2.		
A5.504.3 Temporary ventilation. The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30 percent based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy, or, if the building is occupied during alteration, at the conclusion of construction.		
A5.504.1.2 Additional IAQ measures. Employ		

additional measures as listed in Items 1 through 5 in Section A5.504.1.3. 5.504.1.3 Temporary ventilation. If the HVAC system is used during construction, use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy. Applies to additions or alterations.	X		
A5.504.2 IAQ postconstruction. Flush out the building per Section A5.504.2 prior to occupancy or if			
the building is occupied. A5.504.2.1 IAQ Testing. A testing alternative may be employed after all interior finishes have been installed, using testing protocols recognized by the			
United State Environmental Protection Agency (U.S. EPA) and in accordance with Section A5.504.2.1.2. Retest as required in Section			
A5.504.2.1.3. A5.504.2.1.1 Maximum levels of contaminants. Allowable levels of contaminant concentrations measured by testing shall not exceed the following:		As applicable	As applicable
Carbon Monoxide (CO): 9 parts per million, not to exceed outdoor levels by 2 parts per			
million; 2. Formaldehyde: 27 parts per billion;			
Particulates (PM10): 50 micrograms per cubic meter;			
4. 4-Phenylcyclohexene (4-PCH): 6.5			
micrograms per cubic meter; and 5. Total Volatile Organic Compounds			_
(TVOC): 300 micrograms per cubic meter.			
A5.504.2.1.2 Test protocols. Testing of indoor air quality should include the elements listed in Items 1 through 4.			
A5.504.2.1.3 Noncomplying building areas. For each sampling area of the building exceeding the maximum concentrations specified in Section A5.504.2.1.1, flush out with outside air and retest samples taken from the same area. Repeat the procedures until testing demonstrates compliance.			
	1	1	
5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.	X		

5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.

X

5.504.4.1 Adhesives, sealants, caulks. Adhesives and sealants used on the project shall meet the requirements of the following standards.

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1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products as specified in subsection 2, below.

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 Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with Section 94507.

×

5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36 and 4.37 of the 2007 California Air Resources Board Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply.

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5.504.4.3.1 Aerosol paints and coatings. Aerosol paints and coatings shall meet the PWMIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of *California Code of Regulations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

 5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following: 1. Manufacturer's product specification 2. Field verification of on-site product containers 	X	
5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet at least one of the following testing and product requirements from the items listed in this section.	X	
5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.	X	
5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 5.504.4.1.	×	
5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.) Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5.	X	
A5.504.4.5.1 No added formaldehyde, Tier 2. Use composite wood products approved by the ARB as no-added formaldehyde (NAF) based resins or ultra-low emitting formaldehyde (ULEF)		X
resins. 5.504.4.5.3 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:	X	
Tollowing.	As applicable	
A. Dondont contition the continue the continue the	×	
 Product certifications and specifications. Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). 	X	
 Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards. 	X	
5. Other methods acceptable to the enforcing	X	

agency.			
5.504.4.6 Resilient flooring systems. For 80 percent of floor area receiving resilient flooring, installed resilient flooring shall meet one of the testing and product requirements listed in this section.	X		
A5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.	X		
A5.504.4.7 Resilient flooring systems, Tier 1. For 90 percent of floor area receiving resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database; products compliant with CHPS criteria certified under the Greenguard Children & Schools program; certified under the FloorScore program of the Resilient Floor Covering Institute; or meet California Department of Public Health 2010 Specification 01350.			
A5.504.4.7.1 Resilient flooring systems, Tier 2. For 100 percent of floor area to scheduled to receive resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database; products compliant with CHPS criteria certified under the Greenguard Children & Schools program; certified under the FloorScore program of the Resilient Floor Covering Institute; or meet California Department of Public Health 2010 Specification 01350.			X
A5.504.4.7.2 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.		X	X
A5.504.4.8 Thermal insulation, Tier 1. Comply with the standards listed in Items 1 through 3. A5.504.4.8.1 Thermal insulation, Tier 2. Install thermal insulation which complies with Tier 1		X	×
plus does not contain any added formaldehyde. A5.504.4.8.2 Verification of compliance. Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.		X	X
A5.504.4.9 Acoustical ceilings and wall panels. Comply with Chapter 8 in Title 24, Part 2 and with the VOC- emission limits defined in the 2009 CHPS criteria and listed on its High Performance			_
Products Database. A5.504.4.9.1 Verification of compliance.			

Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits. A5.504.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas. A5.504.5.1 Entryway systems. Install permanent		
entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in Section A5.504.5.1.		
A5.504.5.2 Isolation of pollutant sources. In rooms where activities produce hazardous fumes or chemicals, exhaust them and isolate them from their adjacent rooms as listed in Items 1 through 3 in Section A5.504.5.2. 5.504.5.3 Filters. In mechanically ventilated		
buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a MERV of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. Exceptions:	X	
 An ASHRAE 10-percent to 15-percent efficiency filter shall be permitted for an HVAC unit meeting the 2013 California Energy Code having 60,000 Btu/h or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/cfm or less at design air flow. Existing mechanical equipment. 5.504.5.3.1 Labeling. Installed filters shall be 		
clearly labeled by the manufacturer indicating the MERV rating.	X	
5.504.7 Environmental tobacco smoke (ETS) control. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor	X	
air intakes and operable windows and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent. When ordinances, regulations or policies are not in place, post signage to inform building occupants of the prohibitions. Indoor Moisture Control		
5.505.1 Indoor moisture control. Buildings shall meet or exceed the provisions of <i>California Building Code</i> , CCR, Title 24, Part 2, Sections 1203 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures not	X	

applicable to low-rise residential occupancies, see			
Section 5.407.2 of this code. ³			
Air Quality and Exhaust			
5.506.1 Outside air delivery. For mechanically or	X		
naturally ventilated spaces in buildings, meet the	_		
minimum requirements of Section 120.1 (Requirements			
For Ventilation) of the 2013 California Energy Code, or			
the applicable local code, whichever is more stringent,			
and Division 1, Chapter 4 of CCR, Title 8.3			
5.506.2 Carbon dioxide (CO ₂) monitoring. For	X		
buildings or additions equipped with demand control			
ventilation, CO2 sensors and ventilation controls shall be			
specified and installed in accordance with the			
requirements of the 2013 California Energy Code, Sec-			
tion 120(c)(4). ³			
Environmental Comfort			
A5.507.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in			
Sections A5.507.1.1 and A5.507.1.2.			
A5.507.1.1 Single-occupant spaces. Provide			
individual controls that meet energy use		_	_
requirements in the California Energy Code by			
Sections A5.507.1.1.1 and A5.507.1.1.2.			
A5.507.1.1.1 Lighting. Provide individual task			
lighting and/or daylighting controls for at least			
90 percent of the building occupants.		_	
A5.507.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least			
50 percent of the building occupants by Items 1			
and 2 in Section A5.507.1.1.2.			
A5.507.1.2 Multi-occupant spaces. Provide			
lighting and thermal comfort system controls for all		_	_
shared multi-occupant spaces.			
A5.507.2 Daylight. Provide daylit spaces as required			
for toplighting and sidelighting in the California Energy			
Code. In constructing a design, consider Items 1			
through 4 in Section A5.507.3.			
	1		
5.507.4 Acoustical control. Employ building			
assemblies and components with Sound Transmission	X		
Class (STC) values determined in accordance with	E)		
ASTM E 90 and ASTM E 413 or Outdoor-Indoor Sound			
Transmission Class (OITC) determined in accordance			
with ASTM E 1332, using either the prescriptive or			
performance method in Section 5.507.4.1 or 5.507.4.2.			
Exception: Buildings with few or no occupants or			
where occupants are not likely to be affected by			
exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage,			
enclosed parking structures and utility buildings.			
5			
5.507.4.1 Exterior noise transmission,			
prescriptive method. Wall and roof-ceiling	X		
	•		

assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations: 1. Within the 65 CNEL noise contour of an airport. Exceptions:		
 Ldn or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone (AICUZ) plan. 		
 Ldn or CNEL for other airports and heliports for which a land use plan has not been developed shall be determined by the local general plan noise element. 		
 Within the 65 CNEL or Ldn noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway source as determined by the Noise Element of the General Plan. 		
5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB L _{eq} -1-hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).	X	
5.507.4.2 Performance method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (L _{eq} -1Hr) of 50 dBA in occupied areas during any hour of operation.	or ⊠	
5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior.	X	
5.507.4.2.1 Documentation of compliance . An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.	X	
5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.	X	

at least 40.

Outdoor Air Quality			
5.508.1 Ozone depletion and global warming			
reductions. Installations of HVAC, refrigeration and			
fire suppression equipment shall comply with Sections			
5.508.1.1 and 5.508.1.2.	As applicable		
	As applicable		
5.508.1.1 Chlorofluorocarbons (CFCs). Install			
HVAC, refrigeration and fire suppression equipment that	X		
do not contain CECo	_		
do not contain CFCs.			
5.508.1.2 Halons. Install HVAC, refrigeration and			
fire suppression equipment that do not contain			
l lalana	×		
Halons.			
A5 509 1.3 Hydrochloroflyorocarbons (HCECs)			
A5.508.1.3 Hydrochlorofluorocarbons (HCFCs).			
Install HVAC and refrigeration equipment that does			
not contain HCFCs.			
A5.508.1.4 Hydrofluorocarbons (HFCs). Install			
HVAC complying with either of the following:			
1. Install HVAC, refrigeration and fire suppression			
equipment that do not contain HFCs or that do			
not contain HFCs with a global warming			
potential greater than 150.			
Install HVAC and refrigeration equipment that			
limit the use of HFC refrigerant throughthe use			
of a secondary heat transfer fluid with a global		_	_
warming potential no greater than 1.			
5.508.2 Supermarket refrigerant leak reduction.	×		
New commercial refrigeration systems shall comply	As applicable		
with the provisions of this section when installed in	• • •		
retail food stores 8,000 square feet or more			
conditioned area, and that utilize either refrigerated			
display cases, or walk-in coolers or freezers connected			
to remote compressor units or condensing units. The			
leak reduction measures apply to refrigeration systems			
containing high-global-warming potential (high-GWP)			
refrigerants with a GWP of 150 or greater. New			
refrigeration systems include both new facilities and			
the replacement of existing refrigeration systems in			
existing facilities.			
Exception: Refrigeration systems containing			
low-global warming potential (low-GWP)			
refrigerant with a GWP value less than 150 are not			
subject to this section. Low-GWP refrigerants are			
nonozone-depleting refrigerants that include			
ammonia, carbon dioxide (CO ₂), and potentially			
2, and potentially			
other refrigerants.			
5.508.2 Supermarket refrigerant leak reduction.			
New commercial refrigeration systems shall comply with			
the provisions of this section when installed in retail food			
stores 8,000 square feet or more conditioned area, and			
that utilize either refrigerated display cases, or walk-in			
coolers or freezers connected to remote compressor			
		I	

units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities.

Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO2), and potentially other refrigerants.

5.508.2.1 Refrigerant piping. Piping compliant with the *California Mechanical Code* shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than ¹/4 inch, flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted below.

5.508.2.1.1 Threaded pipe. Threaded connections are permitted at the compressor rack.

5.508.2.1.2 Copper pipe. Copper tubing with an OD less than ¹/₄ inch may be used in systems with a refrigerant charge of 5 pounds or less.

5.508.2.1.2.1 Anchorage. ¹/₄ inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils.

5.508.2.1.3 Flared tubing connections. Double-flared tubing connections may be used for pressure controls, valve pilot lines and oil.

Exception: Single-flared tubing connections may be used with a multiring seal coated with industrial sealant suitable for use with refrigerants and tightened in accordance with manufacturer's recommendations.

5.508.2.1.4 Elbows. Short radius elbows are only permitted where space limitations prohibit use of long radius elbows.

5.508.2.2 Valves. Valves and fittings shall comply with the *California Mechanical Code* and as follows.

5.508.2.2.1 Pressure relief valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.

5.508.2.2.1.1 Pressure detection. A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve.

5.508.2.2.2 Access valves. Only Schrader access valves with a brass or steel body are permitted for use.

5.508.2.2.2.1 Valve caps. For systems with a refrigerant charge of 5 pounds or more, valve caps shall be brass or steel and not plastic.

5.508.2.2.2.2 Seal caps. If designed for it, the cap shall have a neoprene O-ring in place.

5.508.2.2.2.1 Chain tethers.

Chain tethers to fit over the stem are required for valves designed to have seal caps.

Exception: Valves with seal caps that are not removed from the valve during stem operation.

5.508.2.3 Refrigerated service cases.

Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances.

5.508.2.3.1. Coil coating. Consideration shall be given the heat transfer efficiency of coil coating to maximize energy efficiency.

5.508.2.4 Refrigerant receivers. Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device that indicates the level of refrigerant in the receiver.

5.508.2.5 Pressure testing. The system shall be pressure tested during installation prior to evacuation and charging.

5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and appropriate tracer gas to bring system pressure up to 300 psig minimum.

5.508.2.5.2 Leaks. Check the system for leaks, repair any leaks, and retest for pressure using the same gauge.

5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more than a +/- one pound pressure change from 300 psig, measured with the same gauge.

5.508.2.6 Evacuation. The system shall be evacuated after pressure testing and prior to charging.

5.508.2.6.1 First vacuum. Pull a system vacuum down to at least 1000 microns (+/- 50

microns), and hold for 30 minutes. 5.508.2.6.2 Second vacuum. Pull a second system vacuum to a minimum of 500 microns and hold for 30 minutes. 5.508.2.6.3 Third vacuum. Pull a third vacuum down to a minimum of 300 microns,	
and hold for 24 hours with a maximum drift of	
100 microns over a 24-hour period.	

- Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7.
 Required prerequisite for this Tier.
 These measures are currently required elsewhere in statute or in regulation.